

WBS 8.4 Chapter 13 Exercises

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Fundamentals of Project Management

PMGT-501

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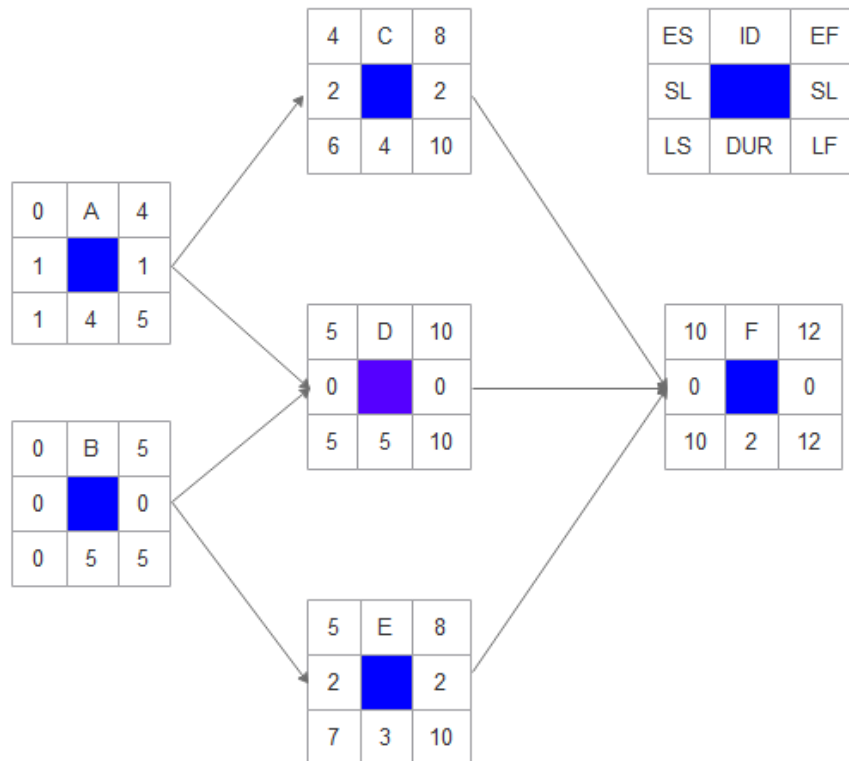
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Chapter 13: Exercises 4 and 6

4. Given the following project network, baseline, and status information, develop status reports for periods 2, 4, 6, 8, and complete the performance indexes table. Calculate the EAC_f and the VAC_f . Based on your data, what is your assessment of the current status of the project? At completion?



ID	Budget \$000	1	2	3	4	5	6	7	8	9	10	11	12
A	40	10	10	10	10								
B	32	8	4	8	4	8							
C	48					12	12	12	12				
D	18						6	2	2	2	6		
E	28						8	8	12				
F	40											20	20
Total	206	18	14	18	14	20	26	22	26	2	6	20	20
Cumulative		18	32	50	64	85	110	132	158	160	166	186	206

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Status Report Ending Period 2					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
A	75%	30	25	20	5	10
B	50%	16	12	12	4	4
Cumulative Totals		46	37	32	9	14
Status Report Ending Period 4					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
A	100%	40	35	40	5	0
B	100%	32	24	24	8	8
Cumulative Totals		72	59	64	13	8
Status Report Ending Period 6					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
A	100%	40	35	40	5	0
B	100%	32	24	32	8	0
C	75%	36	24	24	12	12
D	0%	0	0	6	0	-6
E	50%	14	10	8	4	6
Cumulative Totals		122	93	110	29	12
Status Report Ending Period 8					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
A	100%	40	35	40	5	0
B	100%	32	24	32	8	0
C	100%	48	32	48	16	0
D	33%	6	20	10	-14	-4
E	100%	28	20	28	8	0
Cumulative Totals		154	131	158	23	-4
Performance Indexes Summary						
Period	EV	AC	PV	SPI	CPI	PCI-B
2	46	37	32	1.44	1.24	22%
4	72	59	64	1.13	1.22	35%
6	122	93	110	1.11	1.31	59%
8	154	131	158	0.97	1.18	75%

$$EAC_f = \frac{(BAC - EV)}{\left(\frac{EV}{AC}\right)} + AC$$

$$EAC_f = \frac{(206 - 154)}{(154/131)} + 131$$

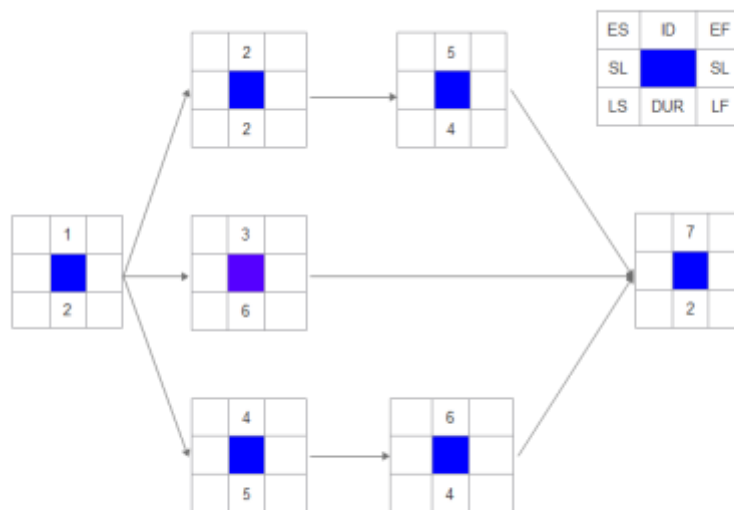
$$EAC_f = \frac{(52)}{(1.18)} + 131 = (44) + 131 = 175$$

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$$VAC_f = (BAC - EAC_f) = (206 - 175) = \mathbf{31}$$

Based on your data, what is your assessment of the current status of the project? At completion? At the end of period 8, the project is 74.75% complete (EV/BAC) and \$23,000 under budget. At this point, the project should have amassed an actual cost of \$154,000, when it actually cost \$131,000. This savings is a good sign as it indicates we are getting \$1.18 worth of work for every \$1.00 we spend. Based on this current rate of operation, the project should come in \$31,000 under budget. The downside is that while there is a substantial savings, the project does appear to be behind schedule.

6. The following labor hours' data have been collected for a nanotechnology project for periods 1 through 6. Compute the SV, CV, SPI, and CPI for each period. Plot the EV and the AC on the summary graph provided (or a similar one). Plot the SPI, CPI, and PCIB on the index graph provided (or a similar one). What is your assessment of the project at the end of period 6?



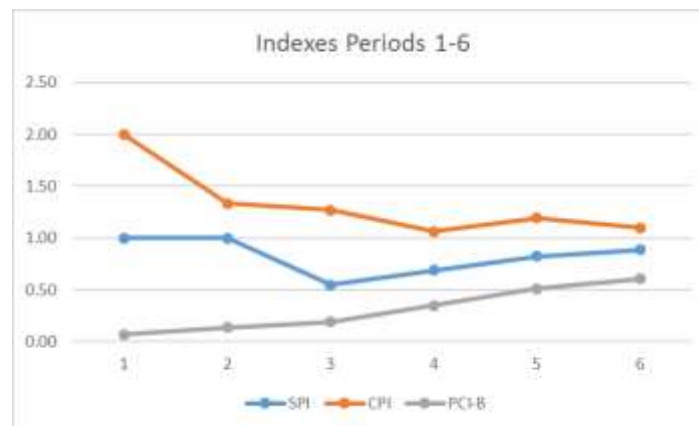
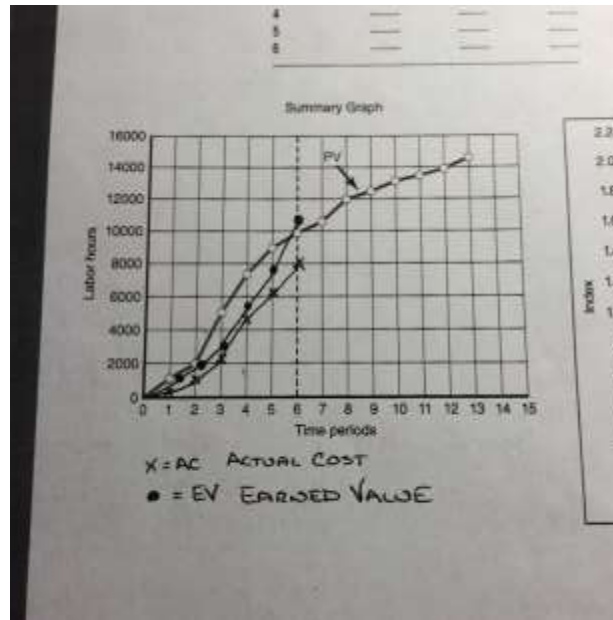
Schedule Information						Baseline budget needs - labor hours (00)																	
ACT/ WP	DUR	ES	LF	SL	Total PV	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
1	2	0	2	0	20	10	10																
2	2	2	7	3	24			16	8														
3	6	2	11	3	30			5	5	10	3	2	5										
4	5	2	7	0	25			10	10	2	2	1											
5	4	4	11	3	16					4	4	4	4										
6	4	7	11	0	20								5	5	6	4							
7	2	11	13	0	10												5	5					
Total PV by period						10	10	31	23	16	9	7	14	5	6	4	5	5					
Cumulative PV by period						10	20	51	74	90	99	106	120	125	131	135	140	145					

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Status Report Ending Period 1					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
1	50%	1000	500	1000	500	0
Cumulative Totals		1000	500	1000	500	0
Status Report Ending Period 2					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
1	100%	2000	1500	2000	500	0
Cumulative Totals		2000	1500	2000	500	0
Status Report Ending Period 3					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
1	100%	2000	1500	2000	500	0
2	0%	0	0	1600	0	-1600
3	10%	300	200	500	100	-200
4	20%	500	500	1000	0	-500
Cumulative Totals		2800	2200	5100	600	-2300
Status Report Ending Period 4					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
1	100%	2000	1500	2000	500	0
2	50%	1200	1000	2400	200	-1200
3	30%	900	800	1000	100	-100
4	40%	1000	1500	2000	-500	-1000
Cumulative Totals		5100	4800	7400	300	-2300
Status Report Ending Period 5					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
1	100%	2000	1500	2000	500	0
2	100%	2400	2000	2400	400	0
3	50%	1500	800	2000	700	-500
4	60%	1500	1500	2200	0	-700
5	25%	400	400	400	0	0
Cumulative Totals		7400	6200	9000	1600	-1200
Status Report Ending Period 6					(\$000)	
Task	% Complete	EV	AC	PV	CV	SV
1	100%	2000	1500	2000	500	0
2	100%	2400	2000	2400	400	0
3	80%	2400	2100	2300	300	100
4	80%	2000	1800	2400	200	-400
5	50%	800	600	800	200	0
Cumulative Totals		8800	8000	9900	1600	-300

Period	SPI	CPI	PCI-B		
1	1.00	2.00	7%	SPI = EV/PV	
2	1.00	1.33	14%	CPI = EV/AC	
3	0.55	1.27	19%	PCIB = EV/BAC	
4	0.69	1.06	35%		
5	0.82	1.19	51%		
6	0.89	1.10	61%		

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What is your assessment of the project at the end of period 6? It is important to first note the critical path 1, 4, 6, & 7. At the completion of the 6th period, activity 4 should be completed but is only 80% complete. Since the actual cost of activity 1 resulted in a savings of \$500, perhaps this savings can be utilized to crash this activity to get the project back on schedule. If nothing is done, the project will not complete on time.

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